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PHILCO CORPORATION Western Development Laboratories

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15 February 1963

SUBJECT: L/C AF04(695)-278
Submission of Technical Report WDL-TR1946
As a deliverable item

TO: Commander
Space Systems Division
Air Force Systems Command
United States Air Force
Los Angeles 45, California

ATTENTION: Technical Data Center

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REFERENCES: (a) L/C AF04(695)-278, Exhibit "D"
(b) AFBM Exhibit 58-1, Para. 3.4

In accordance with the requirements of references (a), and (b) we are forwarding ten (10) copies of the following document:

Title	Number and Date
Life Test on WDL-RT-5A Radar Beacon Transponder with 6-Command Decoder	WDL-TR1946 31 January 1963

PHILCO CORPORATION
Western Development Laboratories

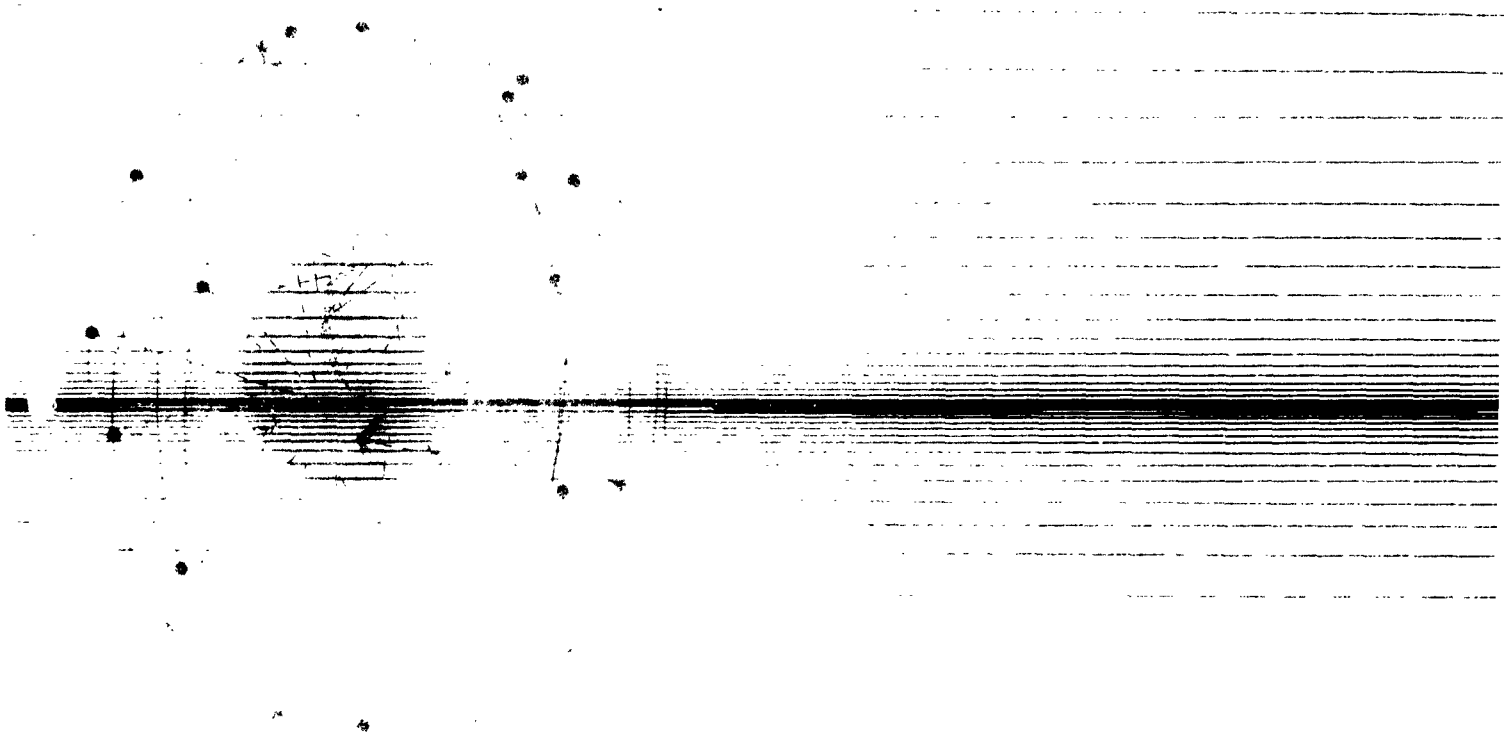
R. W. Boyd

R. W. Boyd
Manager, Contracts Management

TECHNICAL OPERATING REPORT

WDL-TR1946

31 JANUARY 1963



LIFE TEST ON WDL-RT-5A RADAR BEACON TRANSPONDER WITH 6-COMMAND DECODER

AF04(695) -278

PHILCO WESTERN DEVELOPMENT LABORATORIES

TECHNICAL OPERATING REPORT

LIFE TEST ON WDL-RT-5A RADAR BEACON TRANSPONDER WITH 6-COMMAND DECODER

Prepared By

PHILCO CORPORATION
Western Development Laboratories
Palo Alto, California

Contract AF04(695)-278
AFBM Exhibit 58-1, Paragraph 3.4

Prepared for

SPACE SYSTEMS DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
Inglewood, California

ABSTRACT

PHILCO WDL-TR1946 UNCLASSIFIED
LIFE TEST ON WDL-RT-5A RADAR BEACON TRANSPONDER WITH 6-COMMAND DECODER
31 January 1963 110 pages
Contract AF04(695)-278

During lifetesting, Radar Beacon Transponder with 6-Command Decoder, Serial No. 550, disclosed no design weakness or failure trends. The unit has demonstrated an MTBF in excess of the specification requirement (Para. 3.11 of WDL-ES1523B) of 300 hours with 95% assurance level.

The 1000-hour test period was completed without equipment failure or any adjustment, and all performance parameters continued within specification tolerances.

THIS UNCLASSIFIED ABSTRACT IS DESIGNED FOR RETENTION IN A STANDARD 3-BY-5 CARD-SIZE FILE, IF DESIRED. WHERE THE ABSTRACT COVERS MORE THAN ONE SIDE OF THE CARD, THE ENTIRE RECTANGLE MAY BE CUT OUT AND FOLDED AT THE DOTTED CENTER LINE. (IF THE ABSTRACT IS CLASSIFIED, HOWEVER, IT MUST NOT BE REMOVED FROM THE DOCUMENT IN WHICH IT IS INCLUDED.)

FOREWORD

This Technical Operating Report on Definitive Contract AF04(695)-278 is submitted in accordance with Exhibit "D" of that contract, and Section 3, Paragraph 3.4 of AFBM Exhibit 58-1.

ADMINISTRATIVE DATA

PURPOSE OF TEST: The Life Test was performed to disclose design weakness and failure trends and to demonstrate the equipment's capability of exhibiting a Mean-Time-Between-Failures (MTBF) in excess of 300 hours with 95% assurance level.

EQUIPMENT: S-Band Transistorized Radar Transponder with 6 Command Decoder.

MANUFACTURER: ACF Electronics
11 Park Place
Paramus, New Jersey

MODEL NUMBER: WDL-RT-5A

SERIAL NUMBER: 550

QUANTITY TESTED: One

SPECIFICATION: WDL-ES-1523B

SECURITY CLASSIFICATION:

Beacon Command Decoder -	Confidential
Beacon Receiver/Transponder -	Unclassified
WDL-ES-1523	Unclassified
This Report	Unclassified

TEST COMPLETED: 500 Hours of test per spec. para. 4.6.2.1, 24 Aug 1962
1000 Hours of test to satisfy spec. para. 3.11
24 Aug 1962

TEST CONDUCTED BY: WDL Vehicle Equipment Section

DISPOSITION OF SPECIMEN: Continuation of Life Test beyond 1000 hours of test with performance checks at 100-hour intervals.

TABLE OF CONTENTS

APPENDIX

LIFE TEST ON WDL-RT-5A RADAR BEACON TRANSPONDER WITH 6-COMMAND DECODER

1. TEST PROCEDURES

The equipment used in performing the Life Test is listed in Table 1. Equipment on-off cycling was controlled by an automatic timer which was adjusted for a period of 90 minutes, with a duty cycle of 30 percent. After each 25-hour ($\pm$ 2 hours) of "on" time, performance tests were conducted per specification paragraph 4.6.2.3 and the test data entered on WDL Form 5-72B (reproduced in Appendix A). The operational cycling was then resumed until the next 25-hour ($\pm$ 2 hour) test interval.

During the 25 $\pm$ 2 hour cycling period, a six-minute interval automatic timer controlled a stepping relay and digital recording voltmeter. The voltmeter was used to record: (a) input voltage, (b) received signal monitor, (c) temperature monitor and (d) the four detected command tones.

When 500 hours of "on time" testing had been completed, the referenced performance tests were accomplished at stabilized equipment case temperatures of -20 $\pm$ 5°C, 0 $\pm$ 5°C, 25 $\pm$ 5°C, and 74 $\pm$ 5°C. These tests completed the time-test requirements of specification Paragraph 4.6.2.1.

The test was continued for an additional 500 hours (1000 hours total) to demonstrate a capability of exceeding an MTTF of 300 hours with 95 percent assurance level. During this period, performance checks were accomplished at 100 hour intervals.

2. RESULTS OF TESTS

The variations of (a) transmitter power output, (b) receiver sensitivity, (c) transmitter frequency and (d) receiver frequency; are plotted versus test hours on Fig. 1. These graphs and the test data sheet entries (Appendix A) show that the equipment performance has not changed to any significant degree during the 1000 hours of the test.

3. CONCLUSIONS

The Life Test performed on WDL-RT-5A, Serial No. 550, has disclosed no design weakness or failure trends. No failures were experienced during the 1000 hours of test. The unit has demonstrated an MTTF in excess of the specification requirement of 300 hours with 95 percent assurance level.

TABLE 1

TEST EQUIPMENT FOR LIFE TEST OF WDL-RT-5A

EQUIPMENT	MANUFACTURER	MODEL	SERIAL NO.	CALIBRATION
Electronic Counter	Hewlett-Packard	524B	3074	3 Months
Frequency Converter Unit	Hewlett-Packard	1783	1790	3 Months
Electronic Counter	Hewlett-Packard	524B	3122	3 Months
Time Interval Unit	Hewlett-Packard	526B	1283	3 Months
Transfer Oscillator	Hewlett-Packard	540A	935	3 Months
Microwave Sig. Gen.	Polarad	MSG-2	265	3 Months
Pulse Burst Gen.	Electro-Pulse	2130A	426	3 Months
DC Power Supply	Perkin Eng. Corp.	MR532-15A	10854	3 Months
Digital Voltmeter	Non Linear System	Mod. 64	11.4119	3 Months
Microwave Pwr. Mtr.	Hewlett-Packard	430C	3834	3 Months
Wide Range Osc.	Hewlett-Packard	200CDR	16888	3 Months
Wide Range Osc.	Hewlett-Packard	200CDR	16793	3 Months
Wide Range Osc.	Hewlett-Packard	200CD	005-90122	3 Months
Oscilloscope	Tektronix	545	10168	3 Months
Dual Trace Plug-In Unit	Tektronix	CA	002755 008638	3 Months
DC Digital Voltmeter	Hewlett-Packard	405CR	120-01132	3 Months
Unit Klystron Osc.	General Radio	1220-A	491	3 Months
Unit Reg. Pwr. Supp.	General Radio	1201-B	-	3 Months
Multipulse Generator	Polarad	MP-1A	217	3 Months
Digital Recorder	Hewlett-Packard	560-A	503	3 Months
DC Pwr. Supply	Perkin Eng. Corp.	MR532-15A	7047	3 Months
Life Test-Test Panels	Philco	-	-	-
Temperature Test Chamber	Delta Design Inc.	7000A	1372	3 Months

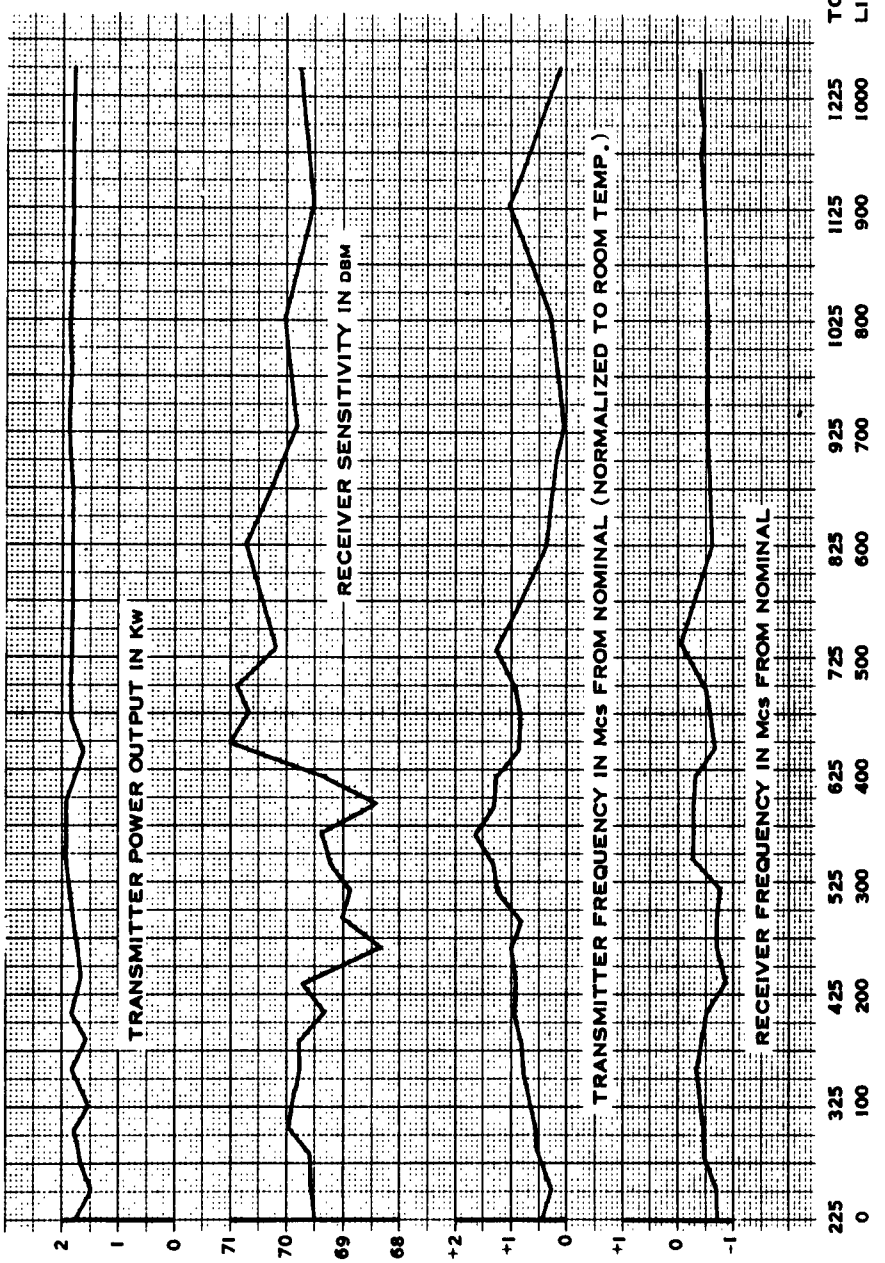


Fig. 1 Functional Variations During 1000-Hour Life Test of WDL-RT-5A Radar Beacon Transponder with 6-Command Decoder (Serial No. 550)

APPENDIX A

LIFE TEST
WDL-RT-5A
RADAR BEACON TRANSPONDER
WITH
6-COMMAND DECODER
DATA SHEETS

(Check One)

INCOMING _____ RTM 224.4

FINAL _____

REPAIR _____

LIFE TEST START

PHILCO

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A
SERIAL NO. 550
DATE 6-15-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.6 watts		
		(2) Input power commanding	60 watts MAX			37.3 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-.65 mc		
		Temp. Monitor (Ref.) 1 °C		vdc	vdc	vdc		
		2 °C				2.783		
		3 °C						
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	dbm 69.5		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	mc +4.38		
			greater than - 3 mc less than - 5 mc	mc	mc	mc -5.00		
			8 ± 2 mc	mc	mc	mc 9.38		

MODEL NO. RT-5A
SERIAL NO. 550

LIFE TEST START

PHILCO

RT-5A Ser #550

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	6-15-62 AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.76k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	.004 vdc		
			(3) 410 pps	vdc	vdc	.754 vdc		
			(4) 820 pps	vdc	vdc	1.868 vdc		
			(5) 1230 pps	vdc	vdc	3.003 vdc		
			(6) 1600 pps	vdc	vdc	vdc		
			3.0 to 4.5 vdc			4.005		
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.1 μs		
			(2) -0.5 μs MIN	μs	μs	-0.95 μs		
			(3) +8% of Tb MAX	μs	μs	+1.35 μs		
			(4) -8% of Tb MAX	μs	μs	-1.1 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			0.7 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.75 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+0.8 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	2.889 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			0.05 μs		

MODEL NO. RT-5A
SERIAL NO. 550

LIFE TEST START

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	RT-5A Ser #550 6-15-62 -19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor	4.7 VDC MAX	vdc	vdc	vdc		
		1 °C				2.97		
		2 °C						
		3 °C						
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	329k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	.004 vdc		
			(3) 410 pps	vdc	vdc	2.369 vdc		
			(4) 820 pps	vdc	vdc	3.281 vdc		
			(5) 1230 pps	vdc	vdc	5.985 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	vdc		
						OK		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
	+25°C		(2) B & C ±2% MIN			OK		
	A +3.3 - 3.3		(3) A & D ±2% MIN			OK		
	B +3.3 - 3.2		(4) A & C ±2% MIN			OK		
	C +3.5 - 3.5		(5) B & D ±2% MIN			OK		
	D +3.2 - 3.0		(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

RT-5A Ser. #550
6-15-62

MODEL NO. RT-5
SERIAL NO. 550

LIFE TEST START

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.88 vdc		
			(2) 3.0 to 4.5 vdc			3.99 vdc		
			(3) 3.0 to 4.5 vdc			3.96 vdc		
			(4) 3.0 to 4.5 vdc			4.06 vdc		
			(5) 5000 ohms MAX			3.95k ohms		
			(6) 5000 ohms MAX			4.05k ohms		
			(7) 5000 ohms MAX			4.03k ohms		
			(8) 5000 ohms MAX			4.07k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator	Kenneth L. Seaton	6-19-62
Supervisor WDL		
Air Force Inspector		
Q/C WDL	John M. Ellwanger	6-15-62

Running Time Meter 0226.4

PHILCO

(Check One)

INCOMING _____ RTM 251.6

FINAL _____

REPAIR _____

1st 25 HR TEST OF LIFE TEST

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A

SERIAL NO. 550

DATE 6-18-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.6 watts		
		(2) Input power commanding	60 watts MAX			37.2 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-0.622 mc		
		Temp. Monitor (Ref.) 1 +32.2°C 2 +33.8°C 3 +33.8°C	ambient	vdc	vdc	vdc 2.842		
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	dbm -69.6		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	mc +4.49		
			greater than - 3 mc less than - 5 mc	mc	mc	mc -4.86		
			8 ± 2 mc	mc	mc	mc 9.35		

6-18-62

MODEL NO. RT-5A
SERIAL NO. 550

PHILCO

1st 25HR TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			> 65 db		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			> 60 db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	OK pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.75 ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	0.006 vdc		
			(3) 410 pps	vdc	vdc	0.748 vdc		
			(4) 820 pps	vdc	vdc	1.858 vdc		
			(5) 1230 pps	vdc	vdc	2.977 vdc		
			(6) 1600 pps	vdc	vdc	3.969 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.15 μs		
			(2) -0.5 μs MIN	μs	μs	-0.9 μs		
			(3) +8% of Tb MAX	μs	μs	+1.4 μs		
			(4) -8% of Tb MAX	μs	μs	-1.1 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			0.7 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	61.9db 1.56 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+0.456 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	2.96 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			0.1 μs		

MODEL NO.
SERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor 1 36.2 °C 2 37.2 °C 3 36.2 °C	4.7 VDC MAX	vdc	vdc	vdc 3.002		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.29 ohms		
			(2) 0.5 VDC MAX	vdc	vdc	0.008 vdc		
			(3) 410 pps	vdc	vdc	1.289 vdc		
			(4) 820 pps	vdc	vdc	2.390 vdc		
			(5) 1230 pps	vdc	vdc	3.304 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	vdc 4.014		
20.	4.3.6.1 +25°	Command Acceptance	(1) A & B ±2% MIN			OK		
			(2) B & C ±2% MIN			OK		
	A +3.2 - 3.15		(3) A & D ±2% MIN			OK		
	B +3.4 - 3.1		(4) A & C ±2% MIN			OK		
	C +3.4 - 3.5		(5) B & D ±2% MIN			OK		
	D +3.5 - 3.2		(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

MODEL NO.
SERIAL NO.

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.93 vdc		
			(2) 3.0 to 4.5 vdc			4.04 vdc		
			(3) 3.0 to 4.5 vdc			4.01 vdc		
			(4) 3.0 to 4.5 vdc			4.11 vdc		
			(5) 5000 ohms MAX			3.94k ohms		
			(6) 5000 ohms MAX			4.05k ohms		
			(7) 5000 ohms MAX			4.03k ohms		
			(8) 5000 ohms MAX			4.07k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator	Kenneth L. Seaton 6-18-62
Supervisor WDL	
Air Force Inspector	
Q/C WDL	Theodore J. Netoff

Running Time Meter 0254.4

(Check One)

INCOMING _____ RTM 0280.4

FINAL _____

REPAIR _____

LIFE TEST 2nd 25HR PERIOD

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A

SERIAL NO. 550

DATE 6-20-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.6 watts		
		(2) Input power commanding	60 watts MAX			37.3 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-.41 mc		
		Temp. Monitor (Ref.)	1 29.5°C 2 30.5°C 3 30.25°C	vdc	vdc	vdc 2.59		
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	dbm 69.6		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	mc +4.05		
			greater than - 3 mc less than - 5 mc	mc	mc	mc -4.97		
			8 ± 2 mc	mc	mc	mc 9.02		

MODEL NO.
SERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.74k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	.005 vdc		
			(3) 410 pps	vdc	vdc	.753 vdc		
			(4) 820 pps	vdc	vdc	1.86 vdc		
			(5) 1230 pps	vdc	vdc	3.00 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.00 vdc		
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.2 μs		
			(2) -0.5 μs MIN	μs	μs	-.9 μs		
			(3) +8% of Tb MAX	μs	μs	+1.3 μs		
			(4) -8% of Tb MAX	μs	μs	-1.1 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			0.7 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.71 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+.8 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	2.86 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			-.05 μs		

MODEL NO. RT-5A
SERIAL NO. 550

2nd 25 HR PERIOD OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor 135.0 °C 236.0 °C 335.5 °C	4.7 VDC MAX	vdc	vdc	vdc 2.97		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.29k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	.007 vdc		
			(3) 410 pps	vdc	vdc	1.29 vdc		
			(4) 820 pps	vdc	vdc	2.39 vdc		
			(5) 1230 pps	vdc	vdc	3.32 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.03 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
		A +3.2 - 3.3	(2) B & C ±2% MIN			OK		
		B +3.16 - 3.2	(3) A & D ±2% MIN			OK		
		C +3.4 - 3.4	(4) A & C ±2% MIN			OK		
		D +3.25 - 3.1	(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

MODEL NO. RT-5A
SERIAL NO. 550
2nd 25HR PERIOD OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.92 vdc		
			(2) 3.0 to 4.5 vdc			4.03 vdc		
			(3) 3.0 to 4.5 vdc			4.01 vdc		
			(4) 3.0 to 4.5 vdc			4.11 vdc		
			(5) 5000 ohms MAX			3.99k ohms		
			(6) 5000 ohms MAX			4.09k ohms		
			(7) 5000 ohms MAX			4.06k ohms		
			(8) 5000 ohms MAX			4.11k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator	Kenneth L. Seaton	6-21-62
Supervisor WDL		
Air Force Inspector		
Q/C WDL	George R. Reagan	6-21-62

Running Time Meter 02826

(Check One)

INCOMING _____ RTM 0304-3

FINAL _____

REPAIR _____

PHILCO

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A
SERIAL NO. 550
DATE 6-23-62

3rd 25 HR. TEST OF LIFETEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.7 watts		
		(2) Input power commanding	60 watts MAX			37.4 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-.4 mc		
		Temp. Monitor (Ref.) 1	32.5°C	vdc	vdc	2.859 vdc		
		Temp. Monitor (Ref.) 2	33.5°C					
		Temp. Monitor (Ref.) 3	33.5°C					
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	-70.0 dbm		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	+4.24 mc		
			greater than - 3 mc less than - 5 mc	mc	mc	-4.94 mc		
			8 ± 2 mc	mc	mc	9.16 mc		
						6-23-62		

MODEL NO. RT-5A
SERIAL NO. 500

3rd 25 HR. TEST OF LIFE TEST 6-23-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			> 65 db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.73k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	004 vdc		
			(3) 410 pps	vdc	vdc	0.749 vdc		
			(4) 820 pps	vdc	vdc	1.871 vdc		
			(5) 1230 pps	vdc	vdc	3.001 vdc		
			(6) 1600 pps	vdc	vdc	4.002 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.0 μs		
			(2) -0.5 μs MIN	μs	μs	-1.0 μs		
			(3) +8% of Tb MAX	μs	μs	+1.2 μs		
			(4) -8% of Tb MAX	μs	μs	-1.2 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			0.7 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.82 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+.85 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	2.969 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			-0.05 μs		
		1 35.5°C				6-23-62		
		2 36.5°C						
		3 36.5°C						

PHILCO

MODEL NO. RT-5A
SERIAL NO. 550

3rd 25 HR. TEST OF LIFETEST 6-23-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor 1 35.5 °C 2 36.5 °C 3 36.5 °C	4.7 VDC MAX	vdc	vdc	3.04 vdc		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.289k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	.002 vdc		
			(3) 410 pps	vdc	vdc	1.296 vdc		
			(4) 820 pps	vdc	vdc	2.409 vdc		
			(5) 1230 pps	vdc	vdc	3.332 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.052 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
	A + 3.2 - 3.2		(2) B & C ±2% MIN			OK		
	B + 3.3 - 3.3		(3) A & D ±2% MIN			OK		
	C + 3.5 - 3.53		(4) A & C ±2% MIN			OK		
	D + 3.2 - 3.16		(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		
						6-23-62		

PHILCO

MODEL NO. RT-5A
SERIAL NO. 550

3rd 25 HR. TEST OF LIFETEST 6-23-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.98 vdc		
			(2) 3.0 to 4.5 vdc			4.09 vdc		
			(3) 3.0 to 4.5 vdc			4.07 vdc		
			(4) 3.0 to 4.5 vdc			4.15 vdc		
			(5) 5000 ohms MAX			3.79k ohms		
			(6) 5000 ohms MAX			3.89k ohms		
			(7) 5000 ohms MAX			3.86k ohms		
			(8) 5000 ohms MAX			3.90k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance				6-23-62		DATE

Operator	Kenneth L. Seaton 6-23-62
Supervisor WDL	
Air Force Inspector	
Q/C WDL	C. Smith

Running Time Meter 0306.2

(Check One)

INCOMING _____ RTM 0329.2

FINAL _____

REPAIR _____

PHILCO

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A

SERIAL NO. 550

DATE 6-25-61

LIFE TEST, 4th 25 HR. PERIOD

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient	30g		
			Non-operate	1/2 sine		
				6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test	No leaks		
			Non-operate	apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.6 watts		
		(2) Input power commanding	60 watts MAX			37.2 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-.38 mc		
		Temp. Monitor (Ref.) 1 31.5°C 2 33.0°C 3 32.3°C		vdc	vdc	2.779 vdc		
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	-69.9 dbm		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	+4.26 mc		
			greater than - 3 mc less than - 5 mc	mc	mc	-5.00 mc		
			8 ± 2 mc	mc	mc	9.26 mc		

A-17

WESTERN DEVELOPMENT LABORATORIES

WDL-TR1946

MODEL NO. RT-5A
SERIAL NO. 550

4th 25 HR. TEST OF LIFE TEST 6-25-62

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65 db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.7K ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	.004 vdc		
			(3) 410 pps	vdc	vdc	0.748 vdc		
			(4) 820 pps	vdc	vdc	1.866 vdc		
			(5) 1230 pps	vdc	vdc	2.974 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	3.968 vdc		
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.05 μs		
			(2) -0.5 μs MIN	μs	μs	-1.0 μs		
			(3) +8% of Tb MAX	μs	μs	+1.25 μs		
			(4) -8% of Tb MAX	μs	μs	-1.20 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			0.7 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.53 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+1.04 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	3.05 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			-0.05 μs		

MODEL NO. RT-5A
SERIAL NO. 550

PHILCO

4th 25 HR. TEST OF LIFE TEST 6-25-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor 1 35.5 °C 2 36.7 °C 3 36.5 °C	4.7 VDC MAX	vdc	vdc	3.08 vdc		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.28k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	0.003 vdc		
			(3) 410 pps	vdc	vdc	1.296 vdc		
			(4) 820 pps	vdc	vdc	2.409 vdc		
			(5) 1230 pps	vdc	vdc	3.336 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.054 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
			(2) B & C ±2% MIN			OK		
			(3) A & D ±2% MIN			OK		
			(4) A & C ±2% MIN			OK		
			(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

A + 3.50 - 3.50
B + 3.3 - 3.2
C + 3.4 - 3.5
D + 3.2 - 3.13

MODEL NO. RT-5A
SERIAL NO. 550

4th 25 HR. TEST OF LIFE TEST 6-25-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.95 vdc		
			(2) 3.0 to 4.5 vdc			4.06 vdc		
			(3) 3.0 to 4.5 vdc			4.04 vdc		
			(4) 3.0 to 4.5 vdc			4.13 vdc		
			(5) 5000 ohms MAX			3.93k ohms		
			(6) 5000 ohms MAX			4.04 k ohms		
			(7) 5000 ohms MAX			4.01 k ohms		
			(8) 5000 ohms MAX			4.06 k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance				6-25-62		DATE

Operator	Kenneth L. Seaton	6-25-62
Supervisor WDL		
Air Force Inspector		
Q/C WDL	George R. Reagan	6-25-62

Running Time Meter 0331.0

(Check One)

INCOMING _____ RTM 0355.9

FINAL _____

REPAIR _____

5th 25 HR. TEST OF LIFE TEST

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A

SERIAL NO. 550

DATE 6-28-62

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

					-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command		50 watts MAX			33.6 watts		
		(2) Input power commanding		60 watts MAX			37.2 watts		
5.	4.3.4.1	Receiver Frequency		±2 mc w/add 0.1 mc/1°C	mc	mc	-0.3 mc		
		Temp. Monitor (Ref.)	130.1°C 232.0°C 332.0°C		vdc	vdc	2.719 vdc		
6.	4.3.4.2	Sensitivity		-65 to -70dbm	dbm	dbm	-69.8 dbm		
7.	4.3.4.3	Bandwidth		greater than + 3 mc less than + 5 mc	mc	mc	+4.27 mc		
				greater than - 3 mc less than - 5 mc	mc	mc	-4.98 mc		
				8 ± 2 mc	mc	mc	9.25 mc		

MODEL NO.
SERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.76kohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	.001 vdc		
			(3) 410 pps	vdc	vdc	0.742 vdc		
			(4) 820 pps	vdc	vdc	1.864 vdc		
			(5) 1230 pps	vdc	vdc	2.985 vdc		
			(6) 1600 pps	vdc	vdc	3.986 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.2 μs		
			(2) -0.5 μs MIN	μs	μs	- .9 μs		
			(3) +8% of Tb MAX	μs	μs	+1.4 μs		
			(4) -8% of Tb MAX	μs	μs	-1.15 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			.7 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.82 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+1.2 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	2.89 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			-0.05 μs		

MODEL NO. RT-5A
SERIAL NO. 550

5th 25 HR. TEST OF LIFE TEST 6-28-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor 1 33.5 °C 2 36.0 °C 3 35.0 °C	4.7 VDC MAX	vdc	vdc	2.95 vdc		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.30k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	.001 vdc		
			(3) 410 pps	vdc	vdc	1.297 vdc		
			(4) 820 pps	vdc	vdc	2.417 vdc		
			(5) 1230 pps	vdc	vdc	3.340 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.066 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
	A + 3.5 - 3.4		(2) B & C ±2% MIN			OK		
	B + 3.3 - 3.3		(3) A & D ±2% MIN			OK		
	C + 3.5 - 3.6		(4) A & C ±2% MIN			OK		
	D + 3.2 - 3.2		(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

MODEL NO. RT-5A
SERIAL NO. 550

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.95 vdc		
			(2) 3.0 to 4.5 vdc			4.06 vdc		
			(3) 3.0 to 4.5 vdc			4.03 vdc		
			(4) 3.0 to 4.5 vdc			4.12 vdc		
			(5) 5000 ohms MAX			3.95k ohms		
			(6) 5000 ohms MAX			4.06k ohms		
			(7) 5000 ohms MAX			4.03k ohms		
			(8) 5000 ohms MAX			4.08k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance				6-28-62		DATE

Operator	Kenneth L. Seaton	6-28-62
Supervisor WDL		
Air Force Inspector		
Q/C WDL	George R. Reagan	6-28-62

Running Time Meter 357.7 hrs.

(Check One)

INCOMING _____ RTM 0380.3

FINAL _____

REPAIR _____

6th 25 HR. TEST OF LIFE TEST

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A

SERIAL NO. 550

DATE 6-30-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.65watts		
		(2) Input power commanding	60 watts MAX			38.2 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-.38 mc		
		Temp. Monitor (Ref.) 1 30.0°C 2 32.0 °C 3 31.8 °C		vdc	vdc	2.69 vdc		
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	-69.8 dbm		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	+4.53 mc		
			greater than - 3 mc less than - 5 mc	mc	mc	-4.84 mc		
			8 ± 2 mc	mc	mc	9.37 mc		

MODEL NO. RT-5A
SERIAL NO. 550

6th 25 HR. TEST OF LIFE TEST

6-30-62

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.26k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	0.004 vdc		
			(3) 410 pps	vdc	vdc	0.746 vdc		
			(4) 820 pps	vdc	vdc	1.862 vdc		
			(5) 1230 pps	vdc	vdc	2.988 vdc		
			(6) 1600 pps	vdc	vdc	3.983 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.1 μs		
			(2) -0.5 μs MIN	μs	μs	-0.9 μs		
			(3) +8% of Tb MAX	μs	μs	+1.3 μs		
			(4) -8% of Tb MAX	μs	μs	-1.15 μs		
						0.7 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs					
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.55 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+1.2 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	2.86 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			-.05 μs		

MODEL NO. RT-5A
SERIAL NO. 550

6th 25 HR. TEST OF LIFE TEST

6-30-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor 1 33.5 °C 2 34.5 °C 3 34.5 °C	4.7 VDC MAX	vdc	vdc	2.92 vdc		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.28k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	.004 vdc		
			(3) 410 pps	vdc	vdc	1.304 vdc		
			(4) 820 pps	vdc	vdc	2.420 vdc		
			(5) 1230 pps	vdc	vdc	3.343 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.060 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
	A + 3.5 - 3.4%		(2) B & C ±2% MIN			OK		
	B + 3.4 - 3.3%		(3) A & D ±2% MIN			OK		
	C + 3.6 - 3.2%		(4) A & C ±2% MIN			OK		
	D + 3.5 - 3.2%		(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

MODEL NO. RT-5A
SERIAL NO. 550

6th TEST (25 HR.) OF LIFE TEST 6-30-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.929 vdc		
			(2) 3.0 to 4.5 vdc			4.042 vdc		
			(3) 3.0 to 4.5 vdc			4.026 vdc		
			(4) 3.0 to 4.5 vdc			4.127 vdc		
			(5) 5000 ohms MAX			3.94k ohms		
			(6) 5000 ohms MAX			4.04k ohms		
			(7) 5000 ohms MAX			4.01k ohms		
			(8) 5000 ohms MAX			4.06k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE
			Operator			Kenneth L. Seaton		6-30-62
			Supervisor WDL					
			Air Force Inspector					
			Q/C WDL			George R. Reagan		6-30-62

Running Time Meter 0381.7

(Check One)

INCOMING _____ RTM 407.1

FINAL _____

REPAIR _____

7th 25 HR. TEST OF LIFE TEST

PHILCO

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A
SERIAL NO. 550
DATE 7-3-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.6 watts		
		(2) Input power commanding	60 watts MAX			37.2 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-0.45 mc		
		Temp. Monitor (Ref.) 1	28.0°C	vdc	vdc	2.572 vdc		
		Temp. Monitor (Ref.) 2	30.5°C					
		Temp. Monitor (Ref.) 3	30.0°C					
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	-69.3 dbm		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	+4.38 mc		
			greater than - 3 mc less than - 5 mc	mc	mc	-4.77 mc		
			8 ± 2 mc	mc	mc	9.15 mc		

MODEL NO. RT-5A
SERIAL NO. 550

7th 25 HR. TEST OF LIFE TEST 7-3-62

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.75k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	.002 vdc		
			(3) 410 pps	vdc	vdc	0.738 vdc		
			(4) 820 pps	vdc	vdc	1.853 vdc		
			(5) 1230 pps	vdc	vdc	2.973 vdc		
			(6) 1600 pps	vdc	vdc	3.980 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.2 μs		
			(2) -0.5 μs MIN	μs	μs	- .9 μs		
			(3) +8% of Tb MAX	μs	μs	+1.35 μs		
			(4) -8% of Tb MAX	μs	μs	-1.1 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			0.7 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.8 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+1.3 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	2.864 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			-0.1 μs		

MODEL NO. RT-5A
SERIAL NO. 550

7th 25 HR. TEST OF LIFE TEST 7-3-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor 1 33.5 °C 2 35.0 °C 3 34.0 °C	4.7 VDC MAX	vdc	vdc	2.910 vdc		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.29k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	.001 vdc		
			(3) 410 pps	vdc	vdc	1.305 vdc		
			(4) 820 pps	vdc	vdc	2.427 vdc		
			(5) 1230 pps	vdc	vdc	3.348 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.073 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
		A+3.45% - 3.35%	(2) B & C ±2% MIN			OK		
		B+3.30% - 3.25%	(3) A & D ±2% MIN			OK		
		C+3.50% - 3.50%	(4) A & C ±2% MIN			OK		
		D+3.25% - 3.15%	(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

MODEL NO. RT-5A
SERIAL NO. 550

7th 25 HR. TEST OF LIFE TEST 7-3-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.94 vdc		
			(2) 3.0 to 4.5 vdc			4.05 vdc		
			(3) 3.0 to 4.5 vdc			4.02 vdc		
			(4) 3.0 to 4.5 vdc			4.12 vdc		
			(5) 5000 ohms MAX			3.95k ohms		
			(6) 5000 ohms MAX			4.06k ohms		
			(7) 5000 ohms MAX			4.03k ohms		
			(8) 5000 ohms MAX			4.08k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator: Kenneth L. Seaton 7-3-62

Supervisor WDL:

Air Force Inspector:

Q/C WDL: George R. Reagan 7-3-62

Running Time Meter 0408.9

(Check One)

INCOMING _____ RTM 435.4

FINAL _____

REPAIR _____

PHILCO

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A

SERIAL NO. 550

DATE 7-6-62

8th 25 HR. TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.7 watts		
		(2) Input power commanding	60 watts MAX			33.7 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-3.5 mc		
		Temp. Monitor (Ref.) 1 30.5°C 2 33.5°C 3 32.0°C		vdc	vdc	2.69 vdc		
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	-69.7 dbm		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	+4.77 mc		
			greater than - 3 mc less than - 5 mc	mc	mc	-4.77 mc		
			8 ± 2 mc	mc	mc	9.54 mc		

MODEL NO. RT-5A
SERIAL NO. 550

8th 25 HR. TEST OF LIFE TEST — 7-6-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.74k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	0.019 vdc		
			(3) 410 pps	vdc	vdc	0.763 vdc		
			(4) 820 pps	vdc	vdc	1.880 vdc		
			(5) 1230 pps	vdc	vdc	3.028 vdc		
			(6) 1600 pps	vdc	vdc	4.010 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.05 μs		
			(2) -0.5 μs MIN	μs	μs	-1.0 μs		
			(3) +8% of Tb MAX	μs	μs	+1.2 μs		
			(4) -8% of Tb MAX	μs	μs	-1.2 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			0.675 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.7 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+1.45 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	3.13 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			-0.05 μs		

PHILCO

WESTERN DEVELOPMENT LABORATORIES

MODEL NO. RT-5A
SERIAL NO. 550

8th 25 HR. TEST OF LIFE TEST 7-6-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor 1 36.5 °C 2 38.5 °C 3 37.5 °C	4.7 VDC MAX	vdc	vdc	3.16 vdc		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.29k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	0.020 vdc		
			(3) 410 pps	vdc	vdc	1.332 vdc		
			(4) 820 pps	vdc	vdc	2.459 vdc		
			(5) 1230 pps	vdc	vdc	3.402 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.120 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
			(2) B & C ±2% MIN			OK		
		A+3.6% - 3.4%	(3) A & D ±2% MIN			OK		
		B+3.3% - 3.3%	(4) A & C ±2% MIN			OK		
		C+3.4% - 3.5%	(5) B & D ±2% MIN			OK		
		D+3.2% - 3.2%	(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

MODEL NO. RT-5A
SERIAL NO. 550

8th 25 HR. TEST OF LIFE TEST 7-6-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.899 vdc		
			(2) 3.0 to 4.5 vdc			4.003 vdc		
			(3) 3.0 to 4.5 vdc			3.978 vdc		
			(4) 3.0 to 4.5 vdc			4.080 vdc		
			(5) 5000 ohms MAX			4.04k ohms		
			(6) 5000 ohms MAX			4.02k ohms		
			(7) 5000 ohms MAX			4.06k ohms		
			(8) 5000 ohms MAX			4.09k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator — Kenneth L. Seaton 7-6-62

Supervisor WDL

Air Force Inspector

Q/C WDL — J. Ellwanger

Running Time Meter 0437.7

(Check One)

INCOMING _____ RTM 0464.0

FINAL _____

REPAIR _____

9th 25HR PERIOD OF LIFE TEST

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A

SERIAL NO. 550

DATE 7-9-62

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient	30g		
			Non-operate	1/2 sine		
				6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test	No leaks		
			Non-operate	apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		LIMITS	-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command		50 watts MAX			33.6 watts		
		(2) Input power commanding		60 watts MAX			37.5 watts		
5.	4.3.4.1	Receiver Frequency		±2 mc w/add 0.1 mc/1°C	mc	mc	-.7 mc		
		Temp. Monitor (Ref.)	132.5°C		vdc	vdc	vdc		
			234.0°C				2.86		
			333.8°C						
6.	4.3.4.2	Sensitivity		-65 to -70dbm	dbm	dbm	dbm -68.3		
7.	4.3.4.3	Bandwidth	greater than + 3 mc		mc	mc	mc		
			less than + 5 mc				+4.67		
			greater than - 3 mc		mc	mc	mc		
			less than - 5 mc				-4.76		
			8 ± 2 mc		mc	mc	mc 9.43		

MODEL NO.
SERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	C ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			> 55db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.79k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	0.004 vdc		
			(3) 410 pps	vdc	vdc	0.769 vdc		
			(4) 820 pps	vdc	vdc	1.889 vdc		
			(5) 1230 pps	vdc	vdc	2.989 vdc		
			(6) 1600 pps	vdc	vdc	vdc		
			3.0 to 4.5 vdc			4.027		
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.1 μs		
			(2) -0.5 μs MIN	μs	μs	-1.1 μs		
			(3) +8% of Tb MAX	μs	μs	+1.3 μs		
			(4) -8% of Tb MAX	μs	μs	-1.25 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			0.675 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.74 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+1.5 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	2.995 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			0.05 μs		

MODEL NO. RT-5A
SERIAL NO. 550

7-9-62

9th TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor 135.0 °C 236.5 °C 336.0 °C	4.7 VDC MAX	vdc	vdc	vdc 3.031		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	ohms 3.29k		
			(2) 0.5 VDC MAX	vdc	vdc	vdc 0.004		
			(3) 410 pps	vdc	vdc	vdc 1.339		
			(4) 820 pps	vdc	vdc	vdc 2.471		
			(5) 1230 pps	vdc	vdc	vdc 3.394		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	vdc 4.139		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
		A + 3.5 - 3.4%	(2) B & C ±2% MIN			OK		
		B + 3.3 - 3.2%	(3) A & D ±2% MIN			OK		
		C + 3.6 - 3.5%	(4) A & C ±2% MIN			OK		
		D + 3.2 - 3.2%	(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

MODEL NO. RT-5A
SERIAL NO. 550

9th TEST OF LIFE TEST

7-9-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.899 vdc		
			(2) 3.0 to 4.5 vdc			4.006 vdc		
			(3) 3.0 to 4.5 vdc			3.980 vdc		
			(4) 3.0 to 4.5 vdc			4.083 vdc		
			(5) 5000 ohms MAX			3.99k ohms		
			(6) 5000 ohms MAX			4.09k ohms		
			(7) 5000 ohms MAX			4.05k ohms		
			(8) 5000 ohms MAX			4.09k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator: Kenneth L. Seaton 7-9-62

Supervisor WDL:

Air Force Inspector:

Q/C WDL: J. Ellwanger

Running Time Meter 0465.7

PHILCO

(Check One)

INCOMING _____ RTM 0491.4

FINAL _____

REPAIR _____

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A

SERIAL NO. 550

DATE 7-13-62

10th 25 HR. TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.6 watts		
		(2) Input power commanding	60 watts MAX			37.5 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-.7 mc		
		Temp. Monitor (Ref.) 1 27.5°C 2 30.0°C 3 28.5°C		vdc	vdc	2.50 vdc		
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	-69.0 dbm		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	+4.31 mc		
			greater than - 3 mc less than - 5 mc	mc	mc	-4.99 mc		
			8 ± 2 mc	mc	mc	9.30 mc		
						7-13-62		

A-41

WDL-TR1946

WESTERN DEVELOPMENT LABORATORIES

MODEL NO. RT-5A
SERIAL NO. 550

10th 25 HR. TEST

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.79k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	.02 vdc		
			(3) 410 pps	vdc	vdc	.76 vdc		
			(4) 820 pps	vdc	vdc	1.86 vdc		
			(5) 1230 pps	vdc	vdc	3.01 vdc		
			(6) 1600 pps	vdc	vdc	3.996 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.1 μs		
			(2) -0.5 μs MIN	μs	μs	-1.0 μs		
			(3) +8% of Tb MAX	μs	μs	+1.3 μs		
			(4) -8% of Tb MAX	μs	μs	-1.2 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			.675 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.8 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+1.2 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	2.80 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			- .05 μs		

7-13-62

MODEL NO. RT-5A
SERIAL NO. 550

10th 25 HR. TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor 1 31.5 °C 2 33.5 °C 3 33.0 °C	4.7 VDC MAX	vdc	vdc	2.86 vdc		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.31k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	0.019 vdc		
			(3) 410 pps	vdc	vdc	1.339 vdc		
			(4) 820 pps	vdc	vdc	2.473 vdc		
			(5) 1230 pps	vdc	vdc	3.413 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.138 vdc		
20.	4.3.6.1	Command Acceptance A + 3.6 - 3.4% B + 3.3 - 3.2% C + 3.5 - 3.5% D + 3.2 - 3.1%	(1) A & B ±2% MIN			OK		
			(2) B & C ±2% MIN			OK		
			(3) A & D ±2% MIN			OK		
			(4) A & C ±2% MIN			OK		
			(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

PHILCO

WESTERN DEVELOPMENT LABORATORIES

WDL-TR1946

MODEL NO. RT-5A
SERIAL NO. 550

10th 25 HR. TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.89 vdc		
			(2) 3.0 to 4.5 vdc			4.00 vdc		
			(3) 3.0 to 4.5 vdc			3.97 vdc		
			(4) 3.0 to 4.5 vdc			4.08 vdc		
			(5) 5000 ohms MAX			3.85k ohms		
			(6) 5000 ohms MAX			4.09k ohms		
			(7) 5000 ohms MAX			4.04k ohms		
			(8) 5000 ohms MAX			4.09k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance				7-13-62		DATE

Operator	Kenneth L. Seaton	7-13-62
Supervisor WDL		
Air Force Inspector		
Q/C WDL	J. Ellwanger	7-13-62

Running Time Meter 492.6

(Check One)

INCOMING _____ RTM 518.9 Hrs.

FINAL _____

REPAIR _____

11th 25HR TEST OF LIFE TEST

PHILCO

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. _____

SERIAL NO. _____

DATE _____

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient	30g		
			Non-operate	1/2 sine		
				6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test	No leaks		
			Non-operate	apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.6 watts		
		(2) Input power commanding	60 watts MAX			37.4 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-0.71 mc		
		Temp. Monitor (Ref.) 128 °C		vdc	vdc	vdc		
		230 °C				2.75		
		330 °C						
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	dbm		
						-68.9		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	mc		
						+4.41		
			greater than - 3 mc less than - 5 mc	mc	mc	mc		
						-4.65		
			8 ± 2 mc	mc	mc	mc		
						9.06		
						7/16/62		

WESTERN DEVELOPMENT LABORATORIES

WDL-TR1546

MODEL NO.
SERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	pps 0		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.77k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	vdc 0.021		
			(3) 410 pps	vdc	vdc	vdc 0.769		
			(4) 820 pps	vdc	vdc	vdc 1.888		
			(5) 1230 pps	vdc	vdc	vdc 3.021		
			(6) 1600 pps	vdc	vdc	vdc 4.020		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	μs +1.10		
			(2) -0.5 μs MIN	μs	μs	μs -1.00		
			(3) +8% of Tb MAX	μs	μs	μs +1.30		
			(4) -8% of Tb MAX	μs	μs	μs -1.20		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			μs 0.66		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	Kw 1.82		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	mc +1.86		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	vdc 3.077		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	μs 1.1		
17.	4.3.5.5	Change in delay	0.25 μs MAX			μs 0.06		

MODEL NO.
SERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor	4.7 VDC MAX	vdc	vdc	vdc		
		1 °C				3.104		
		2 °C						
		3 °C						
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.32k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	0.020 vdc		
			(3) 410 pps	vdc	vdc	1.352 vdc		
			(4) 820 pps	vdc	vdc	2.490 vdc		
			(5) 1230 pps	vdc	vdc	3.433 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.163 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
			(2) B & C ±2% MIN			OK		
	A +3.6 - 3.4%		(3) A & D ±2% MIN			OK		
	B +3.3 - 3.2%		(4) A & C ±2% MIN			OK		
	C +3.4 - 3.6%		(5) B & D ±2% MIN			OK		
	D +3.2 - 3.1%		(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

MODEL NO.
SERIAL NO.

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.91 vdc		
			(2) 3.0 to 4.5 vdc			4.02 vdc		
			(3) 3.0 to 4.5 vdc			3.99 vdc		
			(4) 3.0 to 4.5 vdc			4.09 vdc		
			(5) 5000 ohms MAX			3.86k ohms		
			(6) 5000 ohms MAX			3.97k ohms		
			(7) 5000 ohms MAX			3.94k ohms		
			(8) 5000 ohms MAX			3.98k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator	F. L. Beamer	7/16/62
Supervisor WDL		
Air Force Inspector		
Q/C WDL	J. Ellwanger	7/16/62

Running Time Meter 521.6 Hrs.

PHILCO

WESTERN DEVELOPMENT LABORATORIES

(Check One)

INCOMING _____ RTM 541.3

FINAL _____

REPAIR _____

PHILCO

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

12th 25 HR. TEST OF LIFE TEST

MODEL NO. RT-5A

SERIAL NO. 550

DATE 7-29-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.6 watts		
		(2) Input power commanding	60 watts MAX			37.4 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-0.19 mc		
		Temp. Monitor (Ref.) 1 32.0°C 2 32.0°C 3 32.0°C Internal 2.791VDC	taken after RCVR Monitor Checks	vdc	vdc	2.52 vdc		
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	-69.2 dbm		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	+4.51 mc		
			greater than - 3 mc less than - 5 mc	mc	mc	-5.14 mc		
			8 ± 2 mc	mc	mc	9.65 mc		
						7-20-62		

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WESTERN DEVELOPMENT LABORATORIES

MDM-TM15.16

MODEL NO. RT-5A
SERIAL NO. 550

12th 25 HR. TEST OF LIFE TEST

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65db OK		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.74k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	0.012 vdc		
			(3) 410 pps	vdc	vdc	0.749 vdc		
			(4) 820 pps	vdc	vdc	1.862 vdc		
			(5) 1230 pps	vdc	vdc	2.988 vdc		
			(6) 1600 pps	vdc	vdc	3.984 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.15 μs		
			(2) -0.5 μs MIN	μs	μs	-1.00 μs		
			(3) +8% of Tb MAX	μs	μs	+1.30 μs		
			(4) -8% of Tb MAX	μs	μs	-1.20 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			0.68 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.94 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+1.90 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	2.844 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			0.05 μs		

MODEL NO. RT-5A
SERIAL NO. 550

12th 25 HR. TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor 1 °C 2 °C 3 °C	4.7 VDC MAX	vdc	vdc	2.879 vdc		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.29k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	0.011 vdc		
			(3) 410 pps	vdc	vdc	1.336 vdc		
			(4) 820 pps	vdc	vdc	2.473 vdc		
			(5) 1230 pps	vdc	vdc	3.416 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.143 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
		A +3.7 - 3.6%	(2) B & C ±2% MIN			OK		
		B +3.3 - 3.2%	(3) A & D ±2% MIN			OK		
		C +3.5 - 3.6%	(4) A & C ±2% MIN			OK		
		D +3.2 - 3.1%	(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

MODEL NO. RT-5A
SERIAL NO. 550

12th 25 Hr. TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.97 vdc		
			(2) 3.0 to 4.5 vdc			4.08 vdc		
			(3) 3.0 to 4.5 vdc			4.05 vdc		
			(4) 3.0 to 4.5 vdc			4.16 vdc		
			(5) 5000 ohms MAX			3.98k ohms		
			(6) 5000 ohms MAX			4.08k ohms		
			(7) 5000 ohms MAX			4.05k ohms		
			(8) 5000 ohms MAX			4.10k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance				7-20-62		DATE

Operator: Robert S. Suda

Supervisor WDL:

Air Force Inspector:

Q/C WDL: J. Ellwanger 7-20-62

Running Time Meter 542.4

PHILCO

A-52

WESTERN DEVELOPMENT LABORATORIES

WDL-TR1946

PHILCO

(Check One)

INCOMING _____ RTM 568.6

FINAL _____

REPAIR _____

13th 25HR TEST OF LIFE TEST

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. _____

SERIAL NO. _____

DATE _____

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.6 watts		
		(2) Input power commanding	60 watts MAX			watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-0.20 mc		
		Temp. Monitor (Ref.) 1 -24°C 2 -25°C 3 -25°C		vdc	vdc	2.47 vdc		
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	69.4 dbm		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	+4.47 mc		
			greater than - 3 mc less than - 5 mc	mc	mc	-4.94 mc		
			8 ± 2 mc	mc	mc	+9.41 mc		
						7/23/62		

MODEL NO.
SERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	0 pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.68 ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	0.016 vdc		
			(3) 410 pps	vdc	vdc	0.745 vdc		
			(4) 820 pps	vdc	vdc	1.865 vdc		
			(5) 1230 pps	vdc	vdc	2.99 vdc		
			(6) 1600 pps	vdc	vdc	3.98 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.20 μs		
			(2) -0.5 μs MIN	μs	μs	-1.00 μs		
			(3) +8% of Tb MAX	μs	μs	+1.30 μs		
			(4) -8% of Tb MAX	μs	μs	-1.20 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			0.68 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.94Kw Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+2.13 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	2.73 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.00 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			0.06 μs		

MODEL NO.
SERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor	4.7 VDC MAX	vdc	vdc	vdc		
		1 °C				2.76		
		2 °C						
		3 °C						
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.25k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	0.013 vdc		
			(3) 410 pps	vdc	vdc	1.333 vdc		
			(4) 820 pps	vdc	vdc	2.475 vdc		
			(5) 1230 pps	vdc	vdc	3.42 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.15 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
		A +3.7 - 3.7%	(2) B & C ±2% MIN			OK		
		B +3.4 - 3.2%	(3) A & D ±2% MIN			OK		
		C +3.7 - 3.6%	(4) A & C ±2% MIN			OK		
		D +3.0 - 3.2%	(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

WESTERN DEVELOPMENT LABORATORIES

MODEL NO.
SERIAL NO.

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.932 vdc		
			(2) 3.0 to 4.5 vdc			4.05 vdc		
			(3) 3.0 to 4.5 vdc			4.02 vdc		
			(4) 3.0 to 4.5 vdc			4.12 vdc		
			(5) 5000 ohms MAX			3.93k ohms		
			(6) 5000 ohms MAX			4.03k ohms		
			(7) 5000 ohms MAX			3.99k ohms		
			(8) 5000 ohms MAX			4.03k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator	F. L. Beamer	7/23/62
Supervisor WDL		
Air Force Inspector		
Q/C WDL	J. Ellwanger	7/23/62

Running Time Meter 5693

PHILCO

A-56

WESTERN DEVELOPMENT LABORATORIES

WDL-TR1946

(Check One)

INCOMING _____ RTM 593.4

FINAL _____

REPAIR _____

MODEL NO. _____

SERIAL NO. _____

DATE _____

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

14th 25 HR. TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient	30g		
			Non-operate	1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test	No leaks		
			Non-operate	apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.6 watts		
		(2) Input power commanding	60 watts MAX			watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-0.2 mc		
		Temp. Monitor (Ref.) 1 31 °C 2 32 °C 3 32 °C		vdc	vdc	2.57 vdc		
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	68.4 dbm		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	+4.480 mc		
			greater than - 3 mc less than - 5 mc	mc	mc	-5.348 mc		
			8 ± 2 mc	mc	mc	9.828 mc		
						7-26-62		

MODEL NO.
SERIAL NO.

PHILCO

14th 25 HR. TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.73k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	.016 vdc		
			(3) 410 pps	vdc	vdc	.752 vdc		
			(4) 820 pps	vdc	vdc	1.86 vdc		
			(5) 1230 pps	vdc	vdc	2.98 vdc		
			(6) 1600 pps	vdc	vdc	3.98 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.1 μs		
			(2) -0.5 μs MIN	μs	μs	-1.1 μs		
			(3) +8% of Tb MAX	μs	μs	+1.2 μs		
			(4) -8% of Tb MAX	μs	μs	-1.25 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			0.65 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.9 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+1.82 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	2.81 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.0 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			0.1 μs		

7-26-62

MODEL NO.
SERIAL NO.

PHILCO

14th 25 HR. TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor 1 °C 2 °C 3 °C	4.7 VDC MAX	vdc	vdc	2.83 vdc		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.28k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	0.016 vdc		
			(3) 410 pps	vdc	vdc	1.34 vdc		
			(4) 820 pps	vdc	vdc	2.47 vdc		
			(5) 1230 pps	vdc	vdc	3.42 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.15 vdc		
20.	4.3.6.1	Command Acceptance A +3.7 - 3.6% B +3.4 - 3.3% C +3.7 - 3.7% D +3.3 - 3.2%	(1) A & B ±2% MIN			OK		
			(2) B & C ±2% MIN			OK		
			(3) A & D ±2% MIN			OK		
			(4) A & C ±2% MIN			OK		
			(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

7-26-62

MODEL NO.
SERIAL NO.

14th 25 HR. TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.95 vdc		
			(2) 3.0 to 4.5 vdc			4.06 vdc		
			(3) 3.0 to 4.5 vdc			4.03 vdc		
			(4) 3.0 to 4.5 vdc			4.13 vdc		
			(5) 5000 ohms MAX			4.0 k ohms		
			(6) 5000 ohms MAX			4.11k ohms		
			(7) 5000 ohms MAX			4.07k ohms		
			(8) 5000 ohms MAX			4.11k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance				7-26-62		DATE

Operator R. S. Suda

Supervisor WDL

Air Force Inspector

Q/C WDL J. Ellwanger 7-26-62

Running Time Meter 594.4

PHILCO

A-60

WESTERN DEVELOPMENT LABORATORIES

WDL-TR1946

(Check One)

INCOMING _____ RTM 618.6

FINAL _____

REPAIR _____

15th TEST ON LIFE TEST

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. _____

SERIAL NO. _____

DATE _____

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

					-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX				watts		
		(2) Input power commanding	60 watts MAX				33.6 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C		mc	mc	-0.3 mc		
		Temp. Monitor (Ref.)	1 -33°C 2 -34°C 3 -34°C		vdc	vdc	vdc 2.77		
6.	4.3.4.2	Sensitivity	-65 to -70dbm		dbm	dbm	dbm -69.4		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc		mc	mc	mc +4.59		
			greater than - 3 mc less than - 5 mc		mc	mc	mc 4.40		
			8 ± 2 mc		mc	mc	mc 8.99		
							7/30/62		

MODEL NO.
SERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.72k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	.007 vdc		
			(3) 410 pps	vdc	vdc	0.746 vdc		
			(4) 820 pps	vdc	vdc	1.85 vdc		
			(5) 1230 pps	vdc	vdc	2.96 vdc		
			(6) 1600 pps	vdc	vdc	3.97 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.05 μs		
			(2) -0.5 μs MIN	μs	μs	-1.05 μs		
			(3) +8% of Tb MAX	μs	μs	+1.2 μs		
			(4) -8% of Tb MAX	μs	μs	-1.2 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			.67 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.74kw Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+1.9 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	2.98 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			0.06 μs		

MODEL NO.
SERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor	4.7 VDC MAX	vdc	vdc	vdc		
		1 °C						
		2 °C						
		3 °C				3.01		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.27k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	0.007 vdc		
			(3) 410 pps	vdc	vdc	1.34 vdc		
			(4) 820 pps	vdc	vdc	2.47 vdc		
			(5) 1230 pps	vdc	vdc	3.42 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.14 vdc		
20.	4.3.6.1	Command Acceptance +25°C	(1) A & B ±2% MIN			OK		
			(2) B & C ±2% MIN			OK		
		A +4.0 - 3.8%	(3) A & D ±2% MIN			OK		
		B +3.7 - 3.6%	(4) A & C ±2% MIN			OK		
		C +4.0 - 4.0%	(5) B & D ±2% MIN			OK		
		D +3.6 - 3.4%	(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

MODEL NO.
SERIAL NO.

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.91 vdc		
			(2) 3.0 to 4.5 vdc			4.01 vdc		
			(3) 3.0 to 4.5 vdc			3.98 vdc		
			(4) 3.0 to 4.5 vdc			4.09 vdc		
			(5) 5000 ohms MAX			3.93k ohms		
			(6) 5000 ohms MAX			4.04k ohms		
			(7) 5000 ohms MAX			4.01k ohms		
			(8) 5000 ohms MAX			4.05k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator R. S. Suda

Supervisor WDL

Air Force Inspector

Q/C WDL J. Ellwanger 7/30/62

Running Time Meter 620.2

(Check One)

INCOMING _____ RTM 642.3

FINAL _____

REPAIR _____

MODEL NO. _____

SERIAL NO. _____

DATE _____

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

16th 25HR LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.6 watts		
		(2) Input power commanding	60 watts MAX			37.6 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-0.6 mc		
		Temp. Monitor (Ref.) 1-31 °C		vdc	vdc	vdc		
		2-32 °C				25.89		
		3-32 °C						
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	dbm 71.0		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	mc +4.35		
			greater than - 3 mc less than - 5 mc	mc	mc	mc -5.05		
			8 ± 2 mc	mc	mc	mc 9.40		
						8/3/62		

MODEL NO.
SERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.73K ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	.012 vdc		
			(3) 410 pps	vdc	vdc	0.753 vdc		
			(4) 820 pps	vdc	vdc	1.87 vdc		
			(5) 1230 pps	vdc	vdc	2.993 vdc		
			(6) 1600 pps	vdc	vdc	3.991 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.05 μs		
			(2) -0.5 μs MIN	μs	μs	-1.1 μs		
			(3) +8% of Tb MAX	μs	μs	+1.2 μs		
			(4) -8% of Tb MAX	μs	μs	-1.2 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			.67 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.62kw Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+1.35 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	2.971 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			0.05 μs		

MODEL NO.
SERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor	4.7 VDC MAX	vdc	vdc	vdc		
		1 °C						
		2 °C						
		3 °C				2.994		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.29k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	.013 vdc		
			(3) 410 pps	vdc	vdc	1.35 vdc		
			(4) 820 pps	vdc	vdc	2.494 vdc		
			(5) 1230 pps	vdc	vdc	3.431 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.17 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
		A. +4.0 - 3.9%	(2) B & C ±2% MIN			OK		
		B. +3.6 - 3.6%	(3) A & D ±2% MIN			OK		
		C. +4.0 - 4.0%	(4) A & C ±2% MIN			OK		
		D. +3.5 - 3.5%	(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

MODEL NO.
SERIAL NO.

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.93 vdc		
			(2) 3.0 to 4.5 vdc			4.03 vdc		
			(3) 3.0 to 4.5 vdc			4.00 vdc		
			(4) 3.0 to 4.5 vdc			4.11 vdc		
			(5) 5000 ohms MAX			3.99k ohms		
			(6) 5000 ohms MAX			4.09k ohms		
			(7) 5000 ohms MAX			4.01k ohms		
			(8) 5000 ohms MAX			4.09k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator	R. S. Suda
Supervisor WDL	
Air Force Inspector	
Q/C WDL	J. Ellwanger 8/3/62

Running Time Meter 643.4

PHILCO

(Check One)

INCOMING _____ RTM 668.1

FINAL _____

REPAIR _____

17th 25HR TEST OF LIFE TEST

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A

SERIAL NO. 550

DATE 8-7-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.6 watts		
		(2) Input power commanding	60 watts MAX			37.5 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-.55 mc		
		Temp. Monitor (Ref.) 1 35.0°C 2 35.5°C 3 34.5°C		vdc	vdc	vdc 3.027		
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	dbm 70.7db		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	mc +4.39		
			greater than - 3 mc less than - 5 mc	mc	mc	mc -4.94		
			8 ± 2 mc	mc	mc	mc 9.33		
						8/7/62		

ODEL NO.
ERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	pps none		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.76k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	.017 vdc		
			(3) 410 pps	vdc	vdc	.761 vdc		
			(4) 820 pps	vdc	vdc	1.880 vdc		
			(5) 1230 pps	vdc	vdc	2.919 vdc		
			(6) 1600 pps	vdc	vdc	4.002 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.0 μs		
			(2) -0.5 μs MIN	μs	μs	-1.1 μs		
			(3) +8% of Tb MAX	μs	μs	+1.2 μs		
			(4) -8% of Tb MAX	μs	μs	-1.3 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			.65 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.75kw Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+1.35 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	3.159 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			- .06 μs		

MODEL NO.
SERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor 1 31.5 °C 2 33.5 °C 3 33.0 °C	4.7 VDC MAX	vdc	vdc	vdc 2.691		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.31k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	.016 vdc		
			(3) 410 pps	vdc	vdc	1.362 vdc		
			(4) 820 pps	vdc	vdc	2.515 vdc		
			(5) 1230 pps	vdc	vdc	3.409 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.204 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
		A. +3.45 - 3.6%	(2) B & C ±2% MIN			OK		
		B. +3.2 - 3.2%	(3) A & D ±2% MIN			OK		
		C. +3.5 - 3.5%	(4) A & C ±2% MIN			OK		
		D. +3.2 - 3.1%	(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

PHILCO

MODEL NO. RT-5A
SERIAL NO. 550
17th 25HR TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.92 vdc		
			(2) 3.0 to 4.5 vdc			4.02 vdc		
			(3) 3.0 to 4.5 vdc			4.00 vdc		
			(4) 3.0 to 4.5 vdc			4.10 vdc		
			(5) 5000 ohms MAX			3.97k ohms		
			(6) 5000 ohms MAX			4.09k ohms		
			(7) 5000 ohms MAX			4.04k ohms		
			(8) 5000 ohms MAX			4.09k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE
			Operator			Kenneth L. Seaton		8-7-62
			Supervisor WDL					
			Air Force Inspector					
			Q/C WDL			J. Ellwanger		8-7-62

Running Time Meter 670.7

PHILCO

(Check One)

INCOMING _____ RTM 0694.2

FINAL _____

REPAIR _____

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A

SERIAL NO. 550

DATE 8-10-62

18th 25HR TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.8 watts		
		(2) Input power commanding	60 watts MAX			38.0 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-.45 mc		
		Temp. Monitor (Ref.)	1 29.5°C 2 31.0°C 3 30.5°C	vdc	vdc	vdc 2.67		
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	dbm -70.9dbm		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	mc +4.66		
			greater than - 3 mc less than - 5 mc	mc	mc	mc -4.75		
			8 ± 2 mc	mc	mc	mc 9.41		
						8/10/62		

A-73

WDL-TR1946

WESTERN DEVELOPMENT LABORATORIES

MODEL NO. RT-5A
SERIAL NO. 550

17th 25HR TEST OF LIFE TEST 8-10-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.72k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	.017 vdc		
			(3) 410 pps	vdc	vdc	.757 vdc		
			(4) 820 pps	vdc	vdc	1.872 vdc		
			(5) 1230 pps	vdc	vdc	2.989 vdc		
			(6) 1600 pps	vdc	vdc	vdc		
			3.0 to 4.5 vdc			3.999		
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.1 μs		
			(2) -0.5 μs MIN	μs	μs	-1.1 μs		
			(3) +8% of Tb MAX	μs	μs	+1.3 μs		
			(4) -8% of Tb MAX	μs	μs	-1.25 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			.66 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.78 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+1.6 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	3.059 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			-.05 μs		

MODEL NO.
SERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor 1 35.7 °C 2 36.0 °C 3 35.7 °C	4.7 VDC MAX	vdc	vdc	vdc 3.063		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.29k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	.016 vdc		
			(3) 410 pps	vdc	vdc	.362 vdc		
			(4) 820 pps	vdc	vdc	2.512 vdc		
			(5) 1230 pps	vdc	vdc	3.446 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.204 vdc		
20.	4.3.6.1	Command Acceptance A. +3.6 - 3.55% B. +3.4 - 3.2% C. +3.6 - 3.6% D. +3.3 - 3.7%	(1) A & B ±2% MIN			OK		
			(2) B & C ±2% MIN			OK		
			(3) A & D ±2% MIN			OK		
			(4) A & C ±2% MIN			OK		
			(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

MODEL NO. RT-5A
SERIAL NO. 550

18th 25HR TEST OF LIFE TEST 8-10-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.91 vdc		
			(2) 3.0 to 4.5 vdc			4.02 vdc		
			(3) 3.0 to 4.5 vdc			3.99 vdc		
			(4) 3.0 to 4.5 vdc			4.09 vdc		
			(5) 5000 ohms MAX			3.90k ohms		
			(6) 5000 ohms MAX			4.01k ohms		
			(7) 5000 ohms MAX			4.00k ohms		
			(8) 5000 ohms MAX			4.03k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator: Kenneth L. Seaton 8-10-62

Supervisor WDL:

Air Force Inspector:

Q/C WDL: J. Ellwanger 8-10-62

Running Time Meter 695.6

(Check One)

INCOMING _____ RTM 724.8

FINAL _____

REPAIR _____

PHILCO

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A
SERIAL NO. 550
DATE 8-20-62

500 HR. TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

05 TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE		LIMITS	-19°C	+74°C	AMBIENT 16°-to-31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command		50 watts MAX	32.6 W		33.1 watts		
		(2) Input power commanding		60 watts MAX	37.4		37.6 watts		
5.	4.3.4.1	Receiver Frequency		±2 mc w/add 0.1 mc/1°C	+.03 mc	mc	+0.49 mc		
		Temp. Monitor (Ref.)	-20°C.	0°C.	vdc	vdc	vdc		
			1-18.5°C	1 - .5°C.	0.749		1.189		
			2-18.0°C	2 -1.0°C.					
			3-18.5°C	3 -1.0°C.					
6.	4.3.4.2	Sensitivity		-65 to -70dbm	dbm -69.5	dbm	dbm 70.2		
7.	4.3.4.3	Bandwidth		greater than + 3 mc less than + 5 mc	+4.97 mc	mc	+4.74 mc		
				greater than - 3 mc less than - 5 mc	mc -4.80	mc	mc -4.70		
				8 ± 2 mc	mc 9.77	mc	mc 9.44		

MODEL NO. RT-5A
SERIAL NO. 550

500 HR. TEST OF LIFE TEST 8-20-62

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown	OK		OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN	>65db		>65db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	0 pps	pps	0 pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	4.79k ohms	ohms	4.74k ohms		
			(2) 0.pps 0.5VDC MAX	.039 vdc	vdc	.038 vdc		
			(3) 410 pps	0.687 vdc	vdc	0.725 vdc		
			(4) 820 pps	1.728 vdc	vdc	1.302 vdc		
			(5) 1230 pps	2.774 vdc	vdc	2.897 vdc		
			(6) 1600 pps	3.727 vdc	vdc	3.872 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	+.9 μs	μs	+1.0 μs		
			(2) -0.5 μs MIN	-1.3 μs	μs	-1.1 μs		
			(3) +8% of Tb MAX	+1.1 μs	μs	+1.2 μs		
			(4) -8% of Tb MAX	-1.6 μs	μs	-1.35 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			0.65 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	1.79 Kw	Kw	1.82 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	+5.0 mc	mc	+3.6 mc		
		Temp. monitor (reference)	0.1 mc/1°C	0.682 vdc	vdc	1.233 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	1.05 μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX	-0.05μs		-0.05 μs		

PHILCO

MODEL NO. RT-5A
SERIAL NO. 550

500 HR. TEST OF LIFE TEST

8-20-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE		LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
		-20°C		0°C					
18.	4.3.5.6	Temperature Monitor		4.7 VDC MAX	vdc	vdc	vdc		
		1 -20.0 °C	1	+.25°C.	0.686		1.256		
		2 -19.5 °C	2	+.75°C.					
		3 -20.5 °C	3	0°C.					
19.	4.3.5.7	Transmitter Monitor		(1) 5000 ohms MAX	ohms	ohms	ohms		
					3.29k		3.29k		
				(2) 0.5 VDC MAX	vdc	vdc	vdc		
					0.039		0.039		
				(3) 410 pps	vdc	vdc	vdc		
					1.303		1.351		
				(4) 820 pps	vdc	vdc	vdc		
					2.395		2.487		
				(5) 1230 pps	vdc	vdc	vdc		
					3.328		3.434		
				(6) 1600 pps	vdc	vdc	vdc		
				3.0 to 4.5 vdc	4.032		4.164		
20.	4.3.6.1	Command Acceptance		(1) A & B ±2% MIN	OK		OK		
		-20°C	0°C	(2) B & C ±2% MIN	OK		OK		
		A +3.4 - 3.5%	A +3.7 - 3.6%	(3) A & D ±2% MIN	OK		OK		
		B +2.9 - 2.95%	B +3.4 - 3.4%	(4) A & C ±2% MIN	OK		OK		
		C +2.5 - 2.3%	C +3.5 - 3.35%	(5) B & D ±2% MIN	OK		OK		
		D +2.6 - 2.7%	D +3.2 - 3.1%	(6) C & D ±2% MIN	OK		OK		
21	4.3.6.2	Command Monitor		(1) short	OK		OK		
				(2) short	OK		OK		
				(3) short	OK		OK		
				(4) short	OK		OK		
				(5) short	OK		OK		
				(6) short	OK		OK		
				(7) inf.	OK		OK		
				(8) inf.	OK		OK		
				(9) inf.	OK		OK		
				(10) inf.	OK		OK		
				(11) inf.	OK		OK		
				(12) inf.	OK		OK		

MODEL NO. RT-5A
SERIAL NO. 550

500 HR. TEST OF LIFE TEST 8-20-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc	3.87		3.89 vdc		
			(2) 3.0 to 4.5 vdc	4.02		4.03 vdc		
			(3) 3.0 to 4.5 vdc	3.99		4.00 vdc		
			(4) 3.0 to 4.5 vdc	4.11		4.12 vdc		
			(5) 5000 ohms MAX	3.95		3.94k ohms		
			(6) 5000 ohms MAX	4.13		4.09k ohms		
			(7) 5000 ohms MAX	4.09		4.04k ohms		
			(8) 5000 ohms MAX	4.14		4.10k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone	OK		OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance				8-20-62		DATE

Operator	Kennet L. Seaton	8-20-62
Supervisor WDL		
Air Force Inspector		
Q/C WDL	J. Ellwanger	8-20-62

Running Time Meter: 726.7 (-20°C. TEST) — 728.2 (0°C. TEST)

PHILCO

WESTERN DEVELOPMENT LABORATORIES

(Check One)

INCOMING RT-5A RTM 728.4

FINAL

REPAIR

PHILCO

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A

SERIAL NO. 550

DATE 8-24-62

500HR

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX		34.1	33.3 watts		
		(2) Input power commanding	60 watts MAX		37.0	37.5 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc 1.4	mc ± .0		
		Temp. Monitor (Ref.)	1 25.0°C 1 73.5°C 2 26.5°C 2 74.0°C 3 26.5°C 3 73.5°C	vdc	vdc 4.65	vdc 2.55		
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm 70.0	dbm 70.2		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc +3.93	mc + 4.24		
			greater than - 3 mc less than - 5 mc	mc	mc -3.33	mc - 4.55		
			8 ± 2 mc	mc	mc 7.26	mc 8.79		

MODEL NO.
SERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown		OK	OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN		>65db	>65db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps none	pps none		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms 4.80K	ohms 4.73K		
			(2) 0.pps 0.5VDC MAX	vdc	.044vdc	.039 vdc		
			(3) 410 pps	vdc	.839vdc	0.772 vdc		
			(4) 820 pps	vdc	vdc 1.984	1.889 vdc		
			(5) 1230 pps	vdc	3.113vdc	3.000 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc 4.096	vdc 3.968		
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 µs MIN	µs	+0.9 µs	+1.0 µs		
			(2) -0.5 µs MIN	µs	-0.9 µs	-1.1 µs		
			(3) +8% of Tb MAX	µs	+1.1 µs	+1.3 µs		
			(4) -8% of Tb MAX	µs	-1.1 µs	-1.3 µs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 µs		0.65µs	0.65 µs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	1.62 Kw	1.75 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	-1.5 mc	+1.6 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	4.689vdc	2.54 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 µs	µs	1.2 µs	1.1 µs		
17.	4.3.5.5	Change in delay	0.25 µs MAX		-0.05	-0.05 µs		

MODEL NO. RT-5A
SERIAL NO. 550

500 HR. TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor 1 28.5 °C 2 29.0 °C 3 28.5 °C	4.7 VDC MAX 1 74.5°C. 2 76.0°C. 3 75.0°C.	vdc	vdc 4.70	vdc 2.57		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms 3.30k	ohms 3.29k		
			(2) 0.5 VDC MAX	vdc	vdc .044	vdc .039		
			(3) 410 pps	vdc	vdc 1.404	vdc 1.387		
			(4) 820 pps	vdc	vdc 2.571	vdc 2.539		
			(5) 1230 pps	vdc	vdc 3.523	vdc 3.499		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc 4.254	vdc 4.239		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN		OK	OK		
		+25°C / +74°C	(2) B & C ±2% MIN		OK	OK		
			(3) A & D ±2% MIN		OK	OK		
	A	+3.7 - 3.6% / A +2.85 - 2.7%	(4) A & C ±2% MIN		OK	OK		
	B	+3.4 - 3.2% / B +3.2 - 3.0%	(5) B & D ±2% MIN		OK	OK		
	C	+3.5 - 3.2% / C +2.7 - 3.1%	(6) C & D ±2% MIN		OK	OK		
	D	+3.2 - 3.1% / D +3.0 - 2.9%						
21	4.3.6.2	Command Monitor	(1) short	OK	OK	OK		
			(2) short	OK	OK	OK		
			(3) short	OK	OK	OK		
			(4) short	OK	OK	OK		
			(5) short	OK	OK	OK		
			(6) short	OK	OK	OK		
			(7) inf.	OK	OK	OK		
			(8) inf.	OK	OK	OK		
			(9) inf.	OK	OK	OK		
			(10) inf.	OK	OK	OK		
			(11) inf.	OK	OK	OK		
			(12) inf.	OK	OK	OK		

MODEL NO. RT-5A
SERIAL NO 550
500HR TEST OF LIFE TEST 8-24-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc		3.93	3.91 vdc		
			(2) 3.0 to 4.5 vdc		4.01	4.02 vdc		
			(3) 3.0 to 4.5 vdc		3.99	3.99 vdc		
			(4) 3.0 to 4.5 vdc		4.08	4.10 vdc		
			(5) 5000 ohms MAX		4.05K	3.97k ohms		
			(6) 5000 ohms MAX		4.09K	4.09k ohms		
			(7) 5000 ohms MAX		4.19K	4.02k ohms		
			(8) 5000 ohms MAX		4.11K	4.08k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone		OK	OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator — Kenneth L. Seaton — 8-24-62

Supervisor WDL

Air Force Inspector

Q/C WDL — George R. Reagan — 8-24-62

Running Time Meter	+25°C	+74°C
	729.4	730.9

PHILCO

A-84

WESTERN DEVELOPMENT LABORATORIES

WDL-TR1946

(Check One)

INCOMING _____ RTI 825.6

FINAL _____

REPAIR _____

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A

SERIAL NO. 550

DATE 8-31-62

1st 100 HR. CHECK AFTER 500 HR. LT

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		LIMITS	-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command		50 watts MAX			33.6 watts		
		(2) Input power commanding		60 watts MAX			37.8 watts		
5.	4.3.4.1	Receiver Frequency		±2 mc w/add 0.1 mc/1°C	mc	mc	-.5 mc		
		Temp. Monitor (Ref.)	1 °C		vdc	vdc	2.649vdc		
			2 °C						
			3 °C						
6.	4.3.4.2	Sensitivity		-65 to -70dbm	dbm	dbm	-70.7 dbm		
7.	4.3.4.3	Bandwidth		greater than + 3 mc less than + 5 mc	mc	mc	+4.03 mc		
				greater than - 3 mc less than - 5 mc	mc	mc	-4.53 mc		
				8 ± 2 mc	mc	mc	8.56 mc		

MODEL NO. RT-5A
SERIAL NO. 550

ITEM	1st 100 HR. CHECK AFTER 500 HR. LT PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65 db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.76k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	.039 vdc		
			(3) 410 pps	vdc	vdc	0.779 vdc		
			(4) 820 pps	vdc	vdc	1.900 vdc		
			(5) 1230 pps	vdc	vdc	3.009 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.032 vdc		
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.0 μs		
			(2) -0.5 μs MIN	μs	μs	-1.0 μs		
			(3) +8% of Tb MAX	μs	μs	+1.2 μs		
			(4) -8% of Tb MAX	μs	μs	-1.2 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			.65 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.75 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+.6 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	3.09 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.0 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			-.05 μs		

PHILCO

MODEL NO. RT-5A
SERIAL NO. 550

1st 100 HR. CHECK AFTER 500 HR. LT

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor	4.7 VDC MAX	vdc	vdc	3.11 vdc		
		1 °C						
		2 °C						
		3 °C						
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.30k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	.039 vdc		
			(3) 410 pps	vdc	vdc	1.391 vdc		
			(4) 820 pps	vdc	vdc	2.549 vdc		
			(5) 1230 pps	vdc	vdc	3.513 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.249 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
			(2) B & C ±2% MIN			OK		
		A +3.5 - 3.3%	(3) A & D ±2% MIN			OK		
		B +3.4 - 3.23%	(4) A & C ±2% MIN			OK		
		C +3.5 - 3.45%	(5) B & D ±2% MIN			OK		
		D +3.3 - 3.2%	(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

PHILCO

MODEL NO. RT-5A
SERIAL NO. 550

1st 100 HR. CHECK AFTER 500 HR. LT

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.94 vdc		
			(2) 3.0 to 4.5 vdc			4.04 vdc		
			(3) 3.0 to 4.5 vdc			4.02 vdc		
			(4) 3.0 to 4.5 vdc			4.12 vdc		
			(5) 5000 ohms MAX			3.96k ohms		
			(6) 5000 ohms MAX			4.05k ohms		
			(7) 5000 ohms MAX			4.03k ohms		
			(8) 5000 ohms MAX			4.08k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator — Kenneth L. Seaton — 8-31-62

Supervisor WDL

Air Force Inspector

Q/C WDL — H. B. Stevenson

Running Time Meter 826.9

(Check One)

INCOMING _____ RTM 925.9

FINAL _____

REPAIR _____

PHILCO

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A

SERIAL NO. 550

DATE 9-6-62

2nd 100 HR. TEST AFTER LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command	50 watts MAX			33.7 watts		
		(2) Input power commanding	60 watts MAX			37.8 watts		
5.	4.3.4.1	Receiver Frequency	±2 mc w/add 0.1 mc/1°C	mc	mc	-.49 mc		
		Temp. Monitor (Ref.) 1 °C		vdc	vdc	2.689vdc		
		Temp. Monitor (Ref.) 2 °C						
		Temp. Monitor (Ref.) 3 °C						
6.	4.3.4.2	Sensitivity	-65 to -70dbm	dbm	dbm	-69.8 dbm		
7.	4.3.4.3	Bandwidth	greater than + 3 mc less than + 5 mc	mc	mc	+4.58 mc		
			greater than - 3 mc less than - 5 mc	mc	mc	-4.84 mc		
			8 ± 2 mc	mc	mc	9.42 mc		

MODEL NO. RT-5A
SERIAL NO. 550

2nd 100 HR. TEST AFTER LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65 db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.72k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	.008 vdc		
			(3) 410 pps	vdc	vdc	.743 vdc		
			(4) 820 pps	vdc	vdc	1.861 vdc		
			(5) 1230 pps	vdc	vdc	2.984 vdc		
			(6) 1600 pps	vdc	vdc	3.979 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.1 μs		
			(2) -0.5 μs MIN	μs	μs	-1.05 μs		
			(3) +8% of Tb MAX	μs	μs	+1.2 μs		
			(4) -8% of Tb MAX	μs	μs	-1.25 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			.65 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.82 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+ .2 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	2.91 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			-.05 μs		

MODEL NO. RT-5A
SERIAL NO. 550

PHILCO

9-6-62

ITEM	PARAGRAPH	2nd 100 HR. TEST AFTER LIFE TEST PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor	4.7 VDC MAX	vdc	vdc	2.97 vdc		
		1 °C						
		2 °C						
		3 °C						
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.83k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	.008 vdc		
			(3) 410 pps	vdc	vdc	1.37 vdc		
			(4) 820 pps	vdc	vdc	2.5 vdc		
			(5) 1230 pps	vdc	vdc	3.505 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.247 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
		A +3.6 --3.4%	(2) B & C ±2% MIN			OK		
		B +3.7 --3.2%	(3) A & D ±2% MIN			OK		
		C +3.4 --3.5%	(4) A & C ±2% MIN			OK		
		D +3.2 --3.1%	(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

PHILCO

MODEL NO. RT-5A
SERIAL NO. 550

2nd 100 HR. TEST AFTER 500 HR. LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.92 vdc		
			(2) 3.0 to 4.5 vdc			4.02 vdc		
			(3) 3.0 to 4.5 vdc			4.00 vdc		
			(4) 3.0 to 4.5 vdc			4.10 vdc		
			(5) 5000 ohms MAX			3.83k ohms		
			(6) 5000 ohms MAX			3.93k ohms		
			(7) 5000 ohms MAX			3.90k ohms		
			(8) 5000 ohms MAX			3.95k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator	Kenneth L. Seaton 9-6-62
Supervisor WDL	
Air Force Inspector	
Q/C WDL	H. B. Stevenson

Running Time Meter 926.8

(Check One)

INCOMING _____ RTM 1025.2

FINAL _____

REPAIR _____

PHILCO

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

3rd 100 HR. TEST AFTER 500 HR. LIFE TEST

MODEL NO. RT-5A

SERIAL NO. 550

DATE 9-14-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient	30g		
			Non-operate	1/2 sine		
				6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test	No leaks		
			Non-operate	apparent in 10 minutes		

ITEM	PARAGRAPH	PROCEDURE REFERENCE		LIMITS	-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command		50 watts MAX			34.2 watts		
		(2) Input power commanding		60 watts MAX			38.3 watts		
5.	4.3.4.1	Receiver Frequency		±2 mc w/add 0.1 mc/1°C	mc	mc	-.5 mc		
		Temp. Monitor (Ref.)	1 °C		vdc	vdc	2.83 vdc		
			2 °C						
			3 °C						
6.	4.3.4.2	Sensitivity		-65 to -70dbm	dbm	dbm	-70 dbm		
7.	4.3.4.3	Bandwidth		greater than + 3 mc less than + 5 mc	mc	mc	+4.85 mc		
				greater than - 3 mc less than - 5 mc	mc	mc	-4.74 mc		
				8 ± 2 mc	mc	mc	9.59 mc		

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WDL-TR1946

WESTERN DEVELOPMENT LABORATORIES

MODEL NO. RT-5A
SERIAL NO. 550

3rd 100 HR. TEST AFTER 500 HR. LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65 db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.77k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	.027 vdc		
			(3) 410 pps	vdc	vdc	0.784 vdc		
			(4) 820 pps	vdc	vdc	1.89 vdc		
			(5) 1230 pps	vdc	vdc	3.0 vdc		
			(6) 1600 pps	vdc	vdc	4.02 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.1 μs		
			(2) -0.5 μs MIN	μs	μs	-1.0 μs		
			(3) +8% of Tb MAX	μs	μs	+1.2 μs		
			(4) -8% of Tb MAX	μs	μs	-1.2 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			.67 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.82 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+.55 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	3.05 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.1 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			-.05 μs		

MODEL NO.
SERIAL NO.

PHILCO

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor 1 °C 2 °C 3 °C	4.7 VDC MAX	vdc	vdc	3.06 vdc		
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.31k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	0.027 vdc		
			(3) 410 pps	vdc	vdc	1.41 vdc		
			(4) 820 pps	vdc	vdc	2.61 vdc		
			(5) 1230 pps	vdc	vdc	3.58 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.35 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
	A +3.7 - 3.6%		(2) B & C ±2% MIN			OK		
	B +3.3 - 3.2%		(3) A & D ±2% MIN			OK		
	C +3.6 - 3.5%		(4) A & C ±2% MIN			OK		
	D +3.3 - 3.1%		(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.					

MODEL NO.
SERIAL NO.

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.91 vdc		
			(2) 3.0 to 4.5 vdc			4.01 vdc		
			(3) 3.0 to 4.5 vdc			3.99 vdc		
			(4) 3.0 to 4.5 vdc			4.09 vdc		
			(5) 5000 ohms MAX			3.96K ohms		
			(6) 5000 ohms MAX			4.07k ohms		
			(7) 5000 ohms MAX			4.04k ohms		
			(8) 5000 ohms MAX			4.09k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator	Kenneth L. Seaton 9-14-62
Supervisor WDL	
Air Force Inspector	
Q/C WDL	H. B. Stevenson

Running Time Meter 1026.0

PHILCO

(Check One)

INCOMING _____ RTM 1125.4

FINAL _____

REPAIR _____

TABLE IV

900 HR. TEST OF LIFE TEST ACCEPTANCE TEST

TRANSISTORIZED RADAR TRANSPONDER

(including 6 Command Decoder)

4th 100 HR. TEST AFTER 500 HR. LIFE TEST

MODEL NO. RT-5A

SERIAL NO. 550

DATE 9-18-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

					-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command		50 watts MAX			34.2 watts		
		(2) Input power commanding		60 watts MAX			38.3 watts		
5.	4.3.4.1	Receiver Frequency		±2 mc w/add 0.1 mc/1°C	mc	mc	-.4 mc		
		Temp. Monitor (Ref.)	1 °C		vdc	vdc	2.72 vdc		
			2 °C						
			3 °C						
6.	4.3.4.2	Sensitivity		-65 to -70dbm	dbm	dbm	-69.6 dbm		
7.	4.3.4.3	Bandwidth		greater than + 3 mc less than + 5 mc	mc	mc	+3.75 mc		
				greater than - 3 mc less than - 5 mc	mc	mc	-4.34 mc		
				8 ± 2 mc	mc	mc	8.09 mc		

MODEL NO. RT-5A
SERIAL NO. 550

900 HR. TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	9-19-62 LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65 db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.72k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	0.001 vdc		
			(3) 410 pps	vdc	vdc	0.715 vdc		
			(4) 820 pps	vdc	vdc	1.81 vdc		
			(5) 1230 pps	vdc	vdc	2.89 vdc		
			(6) 1600 pps	vdc	vdc	3.91 vdc		
			3.0 to 4.5 vdc					
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 μs MIN	μs	μs	+1.0 μs		
			(2) -0.5 μs MIN	μs	μs	-1.0 μs		
			(3) +8% of Tb MAX	μs	μs	+1.2 μs		
			(4) -8% of Tb MAX	μs	μs	-1.3 μs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 μs			0.65 μs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.88 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+1.5 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	2.57 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 μs	μs	μs	1.05 μs		
17.	4.3.5.5	Change in delay	0.25 μs MAX			-0.1 μs		

PHILCO

MODEL NO. RT-5A
SERIAL NO. 550
900 HR. TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor	4.7 VDC MAX	vdc	vdc	vdc		
		1 °C				2.74		
		2 °C						
		3 °C						
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.26k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	0.006 vdc		
			(3) 410 pps	vdc	vdc	1.36 vdc		
			(4) 820 pps	vdc	vdc	2.54 vdc		
			(5) 1230 pps	vdc	vdc	3.54 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.28 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
			(2) B & C ±2% MIN			OK		
		A +3.7 -3.5%	(3) A & D ±2% MIN			OK		
		B +3.3 -3.4%	(4) A & C ±2% MIN			OK		
		C +3.5 -3.7%	(5) B & D ±2% MIN			OK		
		D +3.3 -3.2%	(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

MODEL NO. RT-5A
SERIAL NO. 550

900 HR. TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.88 vdc		
			(2) 3.0 to 4.5 vdc			3.98 vdc		
			(3) 3.0 to 4.5 vdc			3.96 vdc		
			(4) 3.0 to 4.5 vdc			4.06 vdc		
			(5) 5000 ohms MAX			3.87k ohms		
			(6) 5000 ohms MAX			3.97k ohms		
			(7) 5000 ohms MAX			3.94k ohms		
			(8) 5000 ohms MAX			3.98k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator	Kenneth L. Seaton 9-19-62
Supervisor WDL	
Air Force Inspector	
Q/C WDL	H. B. Stevenson

Running Time Meter 1127.0

(Check One)

INCOMING _____ RTM 1245.5

FINAL _____

REPAIR _____

PHILCO

TABLE IV

ACCEPTANCE TEST
TRANSISTORIZED RADAR TRANSPONDER
(including 6 Command Decoder)

MODEL NO. RT-5A
SERIAL NO. 550
DATE 9-24-62

1000 + HR. TEST OF LIFE TEST

ITEM	PARAGRAPH	PROCEDURE REFERENCE	TEST CONDITION	LIMITS	ACCEPT	REJECT
1.	4.3.7.1	(1) Countdown during vibration	Ambient	1% MAX		
		(2) Transmitter Pulse Amplitude change	Operate	10% MAX		
		(3) False Command		None		
		(4) Command Drop-out		None		
2.	4.3.7.2	Shock	Ambient Non-operate	30g 1/2 sine 6 millisec		
3.	4.3.7.3	Pressuration	Ambient--Last Test Non-operate	No leaks apparent in 10 minutes		

					-19°C	+74°C	AMBIENT 16° to 31°	ACCEPT	REJECT
4.	4.3.3.2	(1) Input power no command		50 watts MAX			33.8 watts		
		(2) Input power commanding		60 watts MAX			37.8 watts		
5.	4.3.4.1	Receiver Frequency		±2 mc w/add 0.1 mc/1°C	mc	mc	-.3 mc		
		Temp. Monitor (Ref.)	1 °C 2 °C 3 °C		vdc	vdc	2.79 vdc		
6.	4.3.4.2	Sensitivity		-65 to -70dbm	dbm	dbm	-69.8 dbm		
7.	4.3.4.3	Bandwidth		greater than + 3 mc less than + 5 mc	mc	mc	+4.60 mc		
				greater than - 3 mc less than - 5 mc	mc	mc	-4.76 mc		
				8 ± 2 mc	mc	mc	9.36 mc		

A-101

WESTERN DEVELOPMENT LABORATORIES

WDL-TR1946

PHILCO

MODEL NO. RT-5A
SERIAL NO. 550

1000 + HR. TEST OF LIFE TEST

9-24-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
8.	4.3.4.4	Dynamic Range	0 ⟶ -65 dbm no countdown			OK		
9.	4.3.4.5	Image Rejection	+125 mc 30 db MIN -125 mc 30 db MIN			>65 db		
10.	4.3.4.6	Random Triggers	5 pulses per second MAX	pps	pps	none pps		
11.	4.3.4.7	Receiver Monitor	(1) 5000 ohms MAX	ohms	ohms	4.76k ohms		
			(2) 0.pps 0.5VDC MAX	vdc	vdc	0.019 vdc		
			(3) 410 pps	vdc	vdc	0.759 vdc		
			(4) 820 pps	vdc	vdc	1.880 vdc		
			(5) 1230 pps	vdc	vdc	3.014 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.017 vdc		
12.	4.3.4.8	Pulse acceptance and pulse rejection	(1) +0.5 µs MIN	µs	µs	+1.0 µs		
			(2) -0.5 µs MIN	µs	µs	-1.0 µs		
			(3) +8% of Tb MAX	µs	µs	+1.3 µs		
			(4) -8% of Tb MAX	µs	µs	-1.2 µs		
13.	4.3.5.1	Transmitter pulse width	0.8 ± 0.2 µs			0.66 µs		
14.	4.3.5.2	Transmitter Power	1 Kw to 2.5 Kw	Kw	Kw	1.8 Kw		
15.	4.3.5.3	Transmitter frequency	± 2 mc w/add.	mc	mc	+0.3 mc		
		Temp. monitor (reference)	0.1 mc/1°C	vdc	vdc	3.089 vdc		
16.	4.3.5.4	System Delay	1.0 ± 0.5 µs	µs	µs	1.1 µs		
17.	4.3.5.5	Change in delay	0.25 µs MAX			-.05 µs		

PHILCO

MODEL NO. RT-5A
SERIAL NO. 550

1000 + HR. TEST OF LIFE TEST 9-24-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
18.	4.3.5.6	Temperature Monitor	4.7 VDC MAX	vdc	vdc	3.103 vdc		
		1 °C						
		2 °C						
		3 °C						
19.	4.3.5.7	Transmitter Monitor	(1) 5000 ohms MAX	ohms	ohms	3.31k ohms		
			(2) 0.5 VDC MAX	vdc	vdc	0.011 vdc		
			(3) 410 pps	vdc	vdc	1.430 vdc		
			(4) 820 pps	vdc	vdc	2.644 vdc		
			(5) 1230 pps	vdc	vdc	3.652 vdc		
			(6) 1600 pps 3.0 to 4.5 vdc	vdc	vdc	4.423 vdc		
20.	4.3.6.1	Command Acceptance	(1) A & B ±2% MIN			OK		
		A +3.7 - 3.6%	(2) B & C ±2% MIN			OK		
		B +3.3 - 3.3%	(3) A & D ±2% MIN			OK		
		C +3.6 - 3.5%	(4) A & C ±2% MIN			OK		
		D +3.3 - 3.2%	(5) B & D ±2% MIN			OK		
			(6) C & D ±2% MIN			OK		
21	4.3.6.2	Command Monitor	(1) short			OK		
			(2) short			OK		
			(3) short			OK		
			(4) short			OK		
			(5) short			OK		
			(6) short			OK		
			(7) inf.			OK		
			(8) inf.			OK		
			(9) inf.			OK		
			(10) inf.			OK		
			(11) inf.			OK		
			(12) inf.			OK		

PHILCO

MODEL NO. RT-5A
SERIAL NO. 550

1000 + HR. TEST OF LIFE TEST

9-24-62

ITEM	PARAGRAPH	PROCEDURE REFERENCE	LIMITS	-19°C	+74°C	AMBIENT 19°C to 31°C	ACCEPT	REJECT
22.	4.3.6.3	Tone Monitor	(1) 3.0 to 4.5 vdc			3.90 vdc		
			(2) 3.0 to 4.5 vdc			4.01 vdc		
			(3) 3.0 to 4.5 vdc			3.98 vdc		
			(4) 3.0 to 4.5 vdc			4.09 vdc		
			(5) 5000 ohms MAX			3.97k ohms		
			(6) 5000 ohms MAX			4.07k ohms		
			(7) 5000 ohms MAX			4.04k ohms		
			(8) 5000 ohms MAX			4.09k ohms		
23.	4.3.6.2.2	30 cps Interference	No false tone			OK		
24.	4.3.7.3	Temperature Tests	-19°C and +74°C					
25	4.1	Quality Assurance						DATE

Operator — Kenneth L. Seaton — 9-24-62

Supervisor WDL

Air Force Inspector

Q/C WDL — H. B. Stevenson — 9-24-62

Running Time Meter 1246.8

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